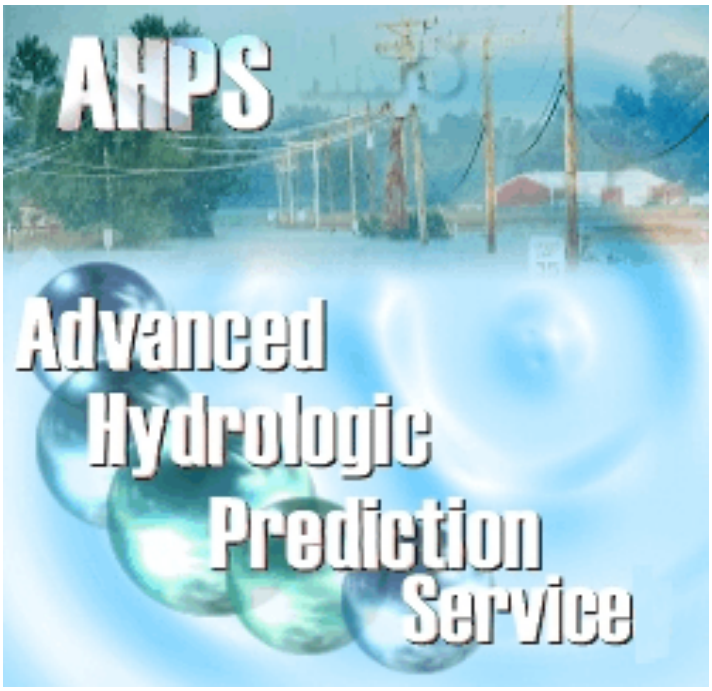
Advanced Hydrologic Prediction Service
Quarterly Report
1st Quarter FY 2005



December 31, 2004

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Flash Flood Services

Flash Flood Monitoring and Prediction (FFMP)

Theme: Flash Flood Services

Management Lead: Stephan Smith

Objective: To develop a full monitoring capability for high resolution gridded QPEs for FFMP

Milestones

Task	Due Date	Status
1. The Point Data Control GUI delivered in OB5	12//31/2004	Complete
2. Begin initial design work for gridded QPE monitoring	12/31/2004	Complete
3. Basin Layering enhancement for OB6	02/01/2005	On Schedule
4. Multiple Frames enhancement for OB6	02/01/2005	On Schedule

Accomplishments/Actions – 1st Quarter FY05

1. Completed Point Data Control GUI for OB5
2. Began initial design work for gridded QPE monitoring

Problems Encountered/Issues – 1st Quarter FY05

None

Western Region Mountain Mapper Integrated with MPE

Theme: Flash Flood Services

Management Lead: Jon Roe

Objective: Integrate existing Western Region Mountain Mapper and OHD Multi-Sensor Precipitation Estimator (MPE) application functionality into a single set of operational applications. A Western Region memo dated 11/18/2003 states the need for MPE to emulate Mountain Mapper in these areas:

- Provide a check based on PRISM, elevation, climate and spatial consistency.
- Estimate point precipitation based on PRISM climatology.
- Display thresholds of values like precipitation or elevation.
- Color code sites based on a statistical qualification using surrounding stations (i.e., computation of standard deviation to denote screened, bad, manual, questionable points).
- Allow user to control threshold for which questionable data is flagged.
- Filter for point data, i.e., use raw or processed data.
- Subdivide the RFC area allowing for multiple, simultaneous quality control processes.
- Add site identifier to error log.
- Generate Mean Areal Precipitation based on discontinuous basins.
- Aggregate six- and 24-hour data time steps.
- Provide the same functionality for temperature quality control.
- Provide the same functionality for freezing level quality control.

Milestones

Task	Due Date	Status
Write HOSIP Stage 1 documents.	Q1	Complete
Pass HOSIP Gate 1.	Q1	Complete
Inventory existing Mountain Mapper components.	Q2	Ongoing
Visit CNRFC to observe operational use of MM.	Q2	Upcoming
Conduct Validation and write HOSIP Stage 2 documents.	Q2	Ongoing
Pass HOSIP Gate 2.	Q2	Upcoming
Install Mountain Mapper at NWSHQ/OHD (visit from WR).	Q3	Not Started
Conduct Research & Analysis and write HOSIP Stage 3 documents.	Q3	Not Started
Complete reverse engineering analysis of MM.	Q3	Not Started
Pass HOSIP Gate 3.	Q4	Upcoming

Task	Due Date	Status
Conduct Operational Development (for an initial partial implementation of MM into MPE) and write HOSIP Stage 4 documents for that implementation. Design the first partial implementation and develop it.	Q4	Not Started
Pass HOSIP Gate 4.	Q4 – Q1, FY06	Upcoming

Accomplishments/Actions – 1st Quarter FY05

Work did not begin until December 2004. OHD is coordinating with Kevin Werner of Western Region Headquarters. First, there is a need to better understand the existing Mountain Mapper applications and data sets in order to understand the detailed requirements. Documentation, field consultation, and the installation of Mountain Mapper at NWS Headquarters will provide the information needed to identify requirements and complete the design. As much as possible, existing code will be re-used in the integrated operations.

We completed the HOSIP Stage 1 NID and passed HOSIP Gate 1.

Problems, Issues, and Notes or Comments – 1st Quarter FY05

In order to effectively implement the integration of Mountain Mapper and MPE, detailed requirements must be identified, and the design must be formulated to address these requirements.

HOSIP Stage 1 (**INPUT**) documents: Need Identification Document (NID), Statement Of Need (SON).

HOSIP Stage 2 (**VALIDATION**) documents: Concept Of Operations (CONOPS) including high level functional requirements, initial Business Case Analysis (BCA), Stage 3 plan.

HOSIP Stage 3 (**RESEARCH & ANALYSIS**) documents: updated CONOPS with lower level functional requirements, scientific algorithm documentation (if applicable), updated BCA, Stage 4 plan.

HOSIP Stage 4 (**OPERATIONAL DEVELOPMENT**) documents: updated CONOPS with technical requirements, Design Specification, Test Plan, Test Procedures, Test Results, software code, release notes, installation instructions, training materials, user manual materials, and system manual materials.

ABRFC P3 Integrated with MPE

Theme: Flash Flood Services

Management Lead: Jon Roe

Objective: Integrate existing ABRFC P3 and OHD Multi-Sensor Precipitation Estimator (MPE) application functionality into a single set of operational applications. This includes alternate methods for generating multi-sensor precipitation, additional interactive quality control methods, including a more powerful polygon edit feature.

Milestones

Task	Due Date	Status
Write HOSIP Stage 1 documents.	Q1	Complete
Pass HOSIP Gate 1.	Q2	Complete
Inventory existing P3 components.	Q2	Ongoing
Complete document describing existing functionality.	Q2	Ongoing
Conduct Validation and write HOSIP Stage 2 documents.	Q2	Ongoing
Complete requirements on enhanced polygon feature.	Q2	Ongoing
Pass HOSIP Gate 2.	Q3	Upcoming
Conduct Research & Analysis and write HOSIP Stage 3 documents.	Q3	Not Started
Pass HOSIP Gate 3.	Q3	Upcoming
Conduct Operational Development and write HOSIP Stage 4 documents. Modify design of MPE FieldGen application to handle new grids. Complete the integration of P3 functionality into MPE.	Q4	Not Started
Pass HOSIP Gate 4.	Q4	Upcoming
Deliver enhanced MPE to AWIPS.	Q1, FY06	Upcoming

Accomplishments/Actions – 1st Quarter FY05

We obtained assorted information from ABRFC to document existing P3 functionality.

We nearly completed documentation that is an inventory of P3 operations.

We installed P3 software at NWS HQ/OHD and established a data flow for it.

We completed documentation describing the design of a new polygon feature for MPE. This will be shared with ABRFC for discussion.

We completed the HOSIP Stage 1 NID and passed HOSIP Gate 1.

Problems, Issues, and Notes or Comments – 1st Quarter FY05

We need to coordinate the detailed requirements of the P3 application with regard to existing MPE functionality, via communications with ABRFC.

We need to distribute the polygon management feature design document for comments. Design work on the integration can then proceed, with actual development starting shortly thereafter.

HOSIP Stage 1 (**INPUT**) documents: Need Identification Document (NID), Statement Of Need (SON).

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HOSIP Stage 3 (**RESEARCH & ANALYSIS**) documents: updated CONOPS with lower level functional requirements, scientific algorithm documentation (if applicable), updated BCA, Stage 4 plan.

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Multisensor Precipitation Estimator Nowcaster

Theme: Flash Flood Services

Management Lead: Richard Fulton (David Kitzmiller through March 2005)

Objective: Increase flash flood warning lead time through short-range prediction of heavy rainfall

Milestones

Task	Due Date	Status
Demonstrate real-time prototype of prediction system	Jun 30 2005	On track
Present verification statistics for prediction system	Sep 30, 2005	On track

Accomplishments/Actions – 1st Quarter FY05

Demonstrated ability of nowcaster system to forecast time series of precipitation rate, such as can be used in advanced distributed hydrologic models.

Problems Encountered/Issues – 1st Quarter FY05

None

Radar Based Probabilistic QPE

Theme: Flash Flood Services

Management Lead: Richard Fulton (David Kitzmiller through March 2005)

Objective: Improve flash flood detection through application of radar-based probabilistic quantitative precipitation estimation (PQPE) algorithms

Milestones

Task	Due Date	Status
Develop demonstration version of radar PQPE system	Jun 30, 2005	On track
Demonstrate real-time prototype version of PQPE system	Sep 30, 2005	
Present verification statistics showing advantages of PQPE over deterministic precipitation estimates	Sep 30, 2005	

Accomplishments/Actions – 1st Quarter FY05

Accepted proposal for final phase of development/demonstration project from University of Iowa contractors.

Problems Encountered/Issues – 1st Quarter FY05

None

Dual Polarization Radar Precipitation Estimates

Theme: Flash Flood Services

Management Lead: David Kitzmiller

Objective: Improve flash flood detection through application of dual-polarization radar estimation algorithms

Milestones

Task	Due Date	Status
Evaluate 2004 rainfall estimates from NSSL	Mar 31 2005	On track
Obtain cool-season 2004-2005 precipitation estimates	Jun 30, 2005	On track
Obtain and evaluate 2005 warm season estimates	Sep 30, 2005	

Accomplishments/Actions – 1st Quarter FY05

Finalized MOU with National Severe Storms Laboratory, for delivery of reports and dual-polarization precipitation estimates and edited reflectivity data.

Obtained some retrospective data from 2003-2004 from NSSL.

Problems Encountered/Issues – 1st Quarter FY05

None

Statistical Distributed Model

Theme: Flash Flood Services

Management Lead: Michael Smith

Objective The objective of FY05 work will be to conduct a scientific validation study to evaluate whether the statistical-distributed modeling approach can improve upon the existing Flash Flood Guidance (FFG) approach and, if so, recommend a path for prototype testing and implementation. Work in 2005 will focus on higher resolution analysis and smaller basins than the preliminary work done in 2004 with no AHPS funds.

Milestones

Task	Due Date	Status
1. COMET Flash Flood Training. At no cost to AHPS, this provides and introduction to distributed modeling and its potential operational uses for flash flood modeling. Class members are WFO staff and their feedback may benefit project planning.	Jan. 27, 2005	Complete
2. International Association of Hydrological Sciences (IAHS) meeting presentation. This will provide a forum for peer review from the international scientific community to further validate the basic approach.	April 9, 2005	On schedule
3. Data collection	Sept. 30, 2005	On schedule
4. Prototype science code. Code developed for validation will be in the research version of the distributed model (HL-RMS) and thus poised for transfer into the operational version.	Sept. 30, 2005	On schedule
5. Report summarizing the results and recommendations from FY05 investigations.	Sept. 30, 2005	On schedule
6. Develop the Concept of Operations (CONOPS) document required for passing through HOSIP Gate 2.	Sept. 30, 2005	On schedule

Accomplishments/Actions – 1st Quarter FY05

Task 1. Refined training materials.
Task 2. Submitted abstract.
Task 3. Most data for initial study basins in ABRFC are in place.
Task 4. Began development of science code.

Problems Encountered/Issues – 1st Quarter FY05

None

National Basin Repository

Theme: Flash Flood Services

Management Lead: Ami Arthur, CIMMS and Ken Howard, NSSL

Objective: To create a National Basin Repository for the FFMP GIS dataset and provide data access through a web interface.

Milestones

Task	Due Date	Status
Establishment of the National Basin Repository computer server hardware and communications infrastructure	May 1,2005	NC
Implementation of software for web interface to FFMP GIS dataset	June15, 2005	NC
Creation of a seamless hydrologically-connected FFMP basin and stream dataset for the United States, including Alaska, Hawaii, Puerto Rico, and Guam.	August 30,2005	NC
Creation of instructions for users to download data and prepare it for localization in AWIPS.	Sept 30, 2005	NC

Accomplishments/Actions – 1st Quarter FY05

Notification of funding availability not received until after first QR. No activities performed during first QR.

Problems Encountered/Issues – 1st Quarter FY05

None

Prototyping NMQ for FFMP

Theme: Flash Flood Services

Management Lead: Ken Howard and Steve Vasiloff, NSSL
Steve Smith and Mary Mullusky, NWS

Objective: To test a Cartesian based regional multisensor QPE and QPF as input into FFMP.

Milestones

Task	Due Date	Status
Establishment of computing hardware and communications infrastructure (using CRAFT and NCEP data feeds).	April 1,2005	NC
The creation and dissemination of 3-D reflectivity products and 2-D severe weather products (HAD, VIL, etc.) as diagnostic fields towards QPE uncertainty evaluation.	May 1,2005	NC
Creation of multisensor QPE products on a Cartesian grid of 1-kilometer resolution refresh rate of five minutes CONUS.	June1, 2005	NC
Dissemination of 5 minute QPE and QPF on a Cartesian grid of 1-kilometer resolution updated every five minutes for two CWA (Phoenix and Oklahoma) regions for ingest into FFMP.	August 1, 2005	NC
Development and access to web based interface for the real time verification of QPE estimates and associated uncertainties.	September 1, 2005	NC

Accomplishments/Actions – 1st Quarter FY05

Notification of funding availability not received until after first QR. No activities performed during first QR.

Problems Encountered/Issues – 1st Quarter FY05

None

Hydraulic Modeling and Analysis Tools

Theme: Flash Flood Theme

Management Lead: Janice Sylvestre

Objective: Develop tools to improve dam break flood forecasting

Milestones

Task	Due Date	Status
Quality check geographic info in the dams database	Q4	On schedule
Add rule of thumb computation to Dam Break Analysis Tool	Q4	Not started yet

Accomplishments/Actions – 1st Quarter FY05

Updated data from the National Inventory of Dams website has been obtained in addition to GIS data with geographic info has been obtained and is being evaluated; started putting project through HOSIP.

Problems Encountered/Issues – 1st Quarter FY05

None

Confidence Factor for QPF Forecasts

Theme: Flash Flood Services

Management Lead: Ed Danaher, HPC Development and Training Branch

Objective: To develop procedures based on the use of short and medium range ensemble predictions, to quantify the measure of uncertainty in the manually produced HPC 6 and 24-hr forecasts

Milestones

Task	Due Date	Status
1. Review short-range and global ensemble QPF forecasts for the period Oct. 2001 to Sept 2003. Compare this to HPC gridded QPF. Determine areas where ensembles provide low, moderate and high confidence in the QPF issued. Categorize by regions and time from model initialization. Calibrate these confidence factors using this data set.	March 2004	Completed
2. Run a one-year test and evaluation of this methodology with several RFCs from diverse geographic and hydrologic areas of the country. This includes verification of the forecasts.	March 2005	On schedule
3. Validate that this process has allowed hydrologist to increase numbers of 6-hr QPFS used in flow forecast and has in fact increased the lead time and POD of flood forecasts.	June 2005	In progress
4. Implement nationally if supported by results from Task 3.	July 2005	Scheduled

Accomplishments/Actions – 1st Quarter FY05

During this quarter we added a third RFC (NCRFC) to assist in the evaluation of these products. NCRFC joins ABRFC and LMRFC in a daily evaluation of the usefulness of these products in the RFC. The evaluation will continue through the winter. HPC has also submitted a revised paper describing this research to the AMS for publication in *Weather and Forecasting*. This experimental output is available at http://www.hpc.ncep.noaa.gov/qpfci/qpfci.shtml and is updated twice a day.

Problems Encountered/Issues – 1st Quarter FY05

None

Site Specific, Add VAR and SAC Calibration Tools

Theme: Flash Flood Services

Management Lead: Jon Roe

Objective: To add variational assimilation (VAR) capabilities to the Site-Specific Hydrologic Predictor (SSHP) application within the WHFS. To enhance calibration tools to support the VAR implementation in the SSHP.

Milestones

Task	Due Date	Status
Write HOSIP Stage 1 documents.	Q2	In Progress
Pass HOSIP Gate 1.	Q2	Upcoming
Determine the relevant operational details with regard to state maintenance when using VAR (i.e., WFO vs RFC responsibilities).	Q2	In Progress
Clarify SAC calibration tools to add and/or enhance. Likely enhancement is the inclusion of AB_OPT in some baselined software.	Q2	In Progress
Write HOSIP Stage 2 documents.	Q3	Not Started
Pass HOSIP Gate 2.	Q3	Upcoming
Conduct Research & Analysis and write HOSIP Stage 3 documents.	Q3	Not Started
Pass HOSIP Gate 3.	Q3	Upcoming
Conduct Operational Development and write HOSIP Stage 4 documents for VAR implementation and calibration tools.	Q1, FY06	Not Started
Pass HOSIP Gate 4.	Q1, FY06	Upcoming
Deliver new SSHP functionality to AWIPS.	TBD	Upcoming

Accomplishments/Actions – 1st Quarter FY05

Discussed scope of proposed project with OCWWS. More discussions are needed.

Discussed with management the HOSIP procedures needed to move forward with the project.

Problems, Issues, and Notes or Comments – 1st Quarter FY05

Need further clarification on the calibration tools from OCWWS/HSD and the field offices.

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HOSIP Stage 3 (**RESEARCH & ANALYSIS**) documents: updated CONOPS with lower level functional requirements, scientific algorithm documentation (if applicable), updated BCA, Stage 4 plan.

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Short- to Long-Term Forecasts

Deterministic Verification

Theme: Short- to Long-Term Forecasts

Management Lead: Jon Roe

Objective: Deliver a state-of-the-art deterministic verification system. We will be working on three functions in this project: developing displays, generating automated (or No Mod) forecasts, and creating confidence intervals. All functions will be pushed through the HOSIP process as a single project.

Milestones

Task	Due Date	Status
Write HOSIP Stage 1 documents.	Q2	Not Started
Pass HOSIP Gate 1.	Q2	Not Started
Conduct Validation and write HOSIP Stage 2 documents.	Q3	Not Started
Pass HOSIP Gate 2.	Q3	Not Started
Conduct Research & Analysis and write HOSIP Stage 3 documents.	Q4	Not Started
Pass HOSIP Gate 3.	Q4	Not Started
Conduct Operational Development and write HOSIP Stage 4 documents.	Q1, FY06	Not Started
Pass HOSIP Gate 4.	Q1, FY06	Not Started
Deliver new functions to AWIPS.	TBD	Not Started

Accomplishments/Actions – 1st Quarter FY05

We completed project identification, budgeting, and planning.

Problems, Issues, and Notes or Comments – 1st Quarter FY05

Notes:

HOSIP Stage 1 (**INPUT**) documents: Need Identification Document (NID), Statement Of Need (SON).

HOSIP Stage 2 (**VALIDATION**) documents: Concept Of Operations (CONOPS) including high level functional requirements, initial Business Case Analysis (BCA), Stage 3 plan.

HOSIP Stage 3 (**RESEARCH & ANALYSIS**) documents: updated CONOPS with

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Ensemble Research

Theme: Short- to Long-Term Forecasts

Management Lead: Pedro Restrepo

Objective: Support RFC ensemble activities and improve short-term ensemble prediction capabilities

Milestones

Task	Due Date	Status
Develop Ensemble Hindcaster, integrate verification tools	Q2	
Develop, integrate, test and verify ENS_PRE_GFS (ensemble pre-processor for GFS reforecast and obs)	Q3	
Develop, integrate, test and verify ENS_GFS_RFC (ensemble pre-processor for GFS and RFC forecasts)	Q3	
Integration-test, -verify, -validate and –benchmark the prototype short-term ensemble application	Q4	
Document	Q4	

Accomplishments/Actions – 1st Quarter FY05

- Delivered an enhanced prototype ensemble pre-processor to AB-,CN- and MARFC
- Completed a paper “Precipitation and temperature short-term ensemble forecasts from existing operational single-value forecasts” by Schaake et al. for submission to Juou8nal of Hydrometeorology

Problems Encountered/Issues – 1st Quarter FY05

- None

Deterministic Data Assimilation

Theme: Short- to Long-Term Forecasts

Management Lead: Pedro Restrepo

Objective: Complete development, testing and evaluation of the prototype variational assimilator (VAR) for headwater 1-hr SAC-UH, and develop a prototype Data Assimilator (DA) for DHMS

Milestones

Task	Due Date	Status
Address VAR Version 1 issues, produce Version 2	Q2	
Develop prototype Data Assimilator (DA) for DHMS	Q3	
Test and evaluate DA	Q3	
Verify, validate and benchmark the prototypes	Q4	
Document	Q4	

Accomplishments/Actions – 1st Quarter FY05

- Continued monitoring of VAR V1 for real time evaluation and data collection for verification
- Started Development of a particle filter-based DA for proof of concept and demonstration

Problems Encountered/Issues – 1st Quarter FY05

- None

Distributed Modeling - Snow Model Research

Theme: Short- to-Long Term Forecasts

Management Lead: Mike Smith

Objective: The objective of FY05 work will be to conduct scientific evaluations of new data for energy budget snow modeling. This project will also overlap with the data preparation for DMIP 2.

Milestones

Task	Due Date	Status
1. Project start up; familiarization with ICP; verify Linux version of energy budget snow model; meet with Dr. R. Pinker of U. Md.	11/1/2004	Complete
2. Select Study basin	12/1/2004	Complete
3. Identify data sources	9/30/2005	Ongoing as new sources emerge
4. Obtain and pre-process data to desired spatial/temporal scale	3/31/2005	On schedule
5. Process data for quality control	6/31/2005	On schedule
6. Run Snow-17 and energy budget models	7/31/2005	On schedule
7. Analyze results	8/31/2005	On schedule
8. Document with recommendations on potential utilization of new meteorological data for driving the energy-based snow and frozen ground model operationally.	9/30/2005	On schedule

Accomplishments/Actions – 1st Quarter FY05

1. Ms. Sun met with Dr. Rachel Pinker of U. of Md. to discuss her GOES satellite data.
2. A bug in the Linux version of the energy budget model was identified and fixed.
3. Analysis will be for the Carson River in California/Nevada. This is one of the DMIP 2 test basins.

Problems Encountered/Issues – 1st Quarter FY05

None

Distributed Model - SAC-SMA parameters

Theme: Short- to Long-Term Forecasts

Management Lead: Mike Smith

Objective: The objective of FY05 work will be to conduct research on usage of SSURGO data and verify whether the use of the data can improve current SAC-SMA parameter estimation and further our distributed modeling. Download data for various projects. Procedures will be developed to store and process the massive data sets.

Milestones

Task	Due Date	Status
1. Obtain high resolution SSURGO and Land Use Land Cover data for DMIP1 basins	Jan. 31, 2005	completed
2. Derive new a priori SAC-SMA parameters using high resolution data for some research basins	March 31, 2005	On schedule
3. Review, understand theory of a priori parameter estimation procedure	April 30, 2005	On schedule
4. Streamline parameter updating (add newly derived data in current grid data sets)	Sept. 30, 2005	
5. Test new parameters against those derived from STATSGO (both for lumped and distributed)	Sept. 30, 2005	On schedule
6. Modify, extend theory of SAC-SMA parameter estimation (e.g. use of CN number explicitly)	Sept. 30, 2005	On schedule

Accomplishments/Actions – 1st Quarter FY05

Task 1: Most of GIS data for DMIP1 basins are downloaded
Task 2: Began processing of GIS data to generate SSURGO-based SAC-SMA parameters for IAHS conference

Problems Encountered/Issues – 1st Quarter FY05

None

Distributed Model - Probabilistic Channel Routing parameters

Theme: Short- to Long-Term Forecasts

Management Lead: Mike Smith

Objective: The activity will help to improve definition of channel properties in distributed modeling, and evaluate its effect on high river flow simulations

Milestones

Task	Due Date	Status
1. Finalize implementation of a new version of kinematic channel routing that uses flood plain definition	Feb. 31, 2005	On schedule
2. Generate probabilistic parameter grids for the DMIP1 basins	March 31, 2005	On schedule
3. Test the new channel routing version and compare with an original power law parameter version	Sept. 30, 2005	On schedule

Accomplishments/Actions – 1st Quarter FY05

Task 1: Simplified version was developed and tested for the Blue basin

Problems Encountered/Issues – 1st Quarter FY05

None

Distributed Model - Evaluate New Parameter Approaches

Theme: Short- to Long Term Forecasts

Management Lead: Mike Smith

Objective: The objective will be to evaluate a parameter regionalization approach using lumped calibrated parameters. Value of soil moisture data for evaluation and calibration of a priori parameters will be also analyzed.

Milestones

Task	Due Date	Status
1. Derive relationships between lumped calibrated SNOW-17 parameters and watershed properties	Mar. 31, 2005	On schedule
2. Generate SNOW-17 parameter grids over Susquehanna River basin	Apr. 30, 2005	On schedule
3. Evaluate and calibrate derived SNOW-17 parameter grids using snow observations and streamflow	Dec. 30, 2005	On schedule
4. Evaluate a priori SAC-SMA parameters over Oklahoma mesonet using runoff and soil moisture data at different spatial scales	Sep. 30, 2005	On schedule
5. Test possibility of using soil moisture data to calibrate a priori SAC-SMA parameters	Sep. 30, 2005	On schedule

Accomplishments/Actions – 1st Quarter FY05

Task 1: Similar analysis was performed for Cont-API model
Task 4: Runoff and soil moisture data for the Oklahoma mesonet region are collected.

Problems Encountered/Issues – 1st Quarter FY05

None

Short-Term Ensemble Software

Theme: Short- to Long-Term Forecasts

Management Lead: Jon Roe

Objective: To begin developing the infrastructure needed to modernize the RFC ensemble computational architecture.

Milestones

Task	Due Date	Status
Write HOSIP Stage 1 documents.	Q2	Not Started
Pass HOSIP Gate 1.	Q2	Not Started
Write Statement Of Objectives (SOO) for contractor tasking.	Q2	Not Started
Review Statement Of Work (SOW) from contractor.	Q3	Not Started
Contractor conducts Validation and writes HOSIP Stage 2 documents.	Q3	Not Started
Pass HOSIP Gate 2.	Q3	Not Started
Contractor conducts Research & Analysis and writes HOSIP Stage 3 documents.	Q3	Not Started
Pass HOSIP Gate 3.	Q3	Not Started
Contractor conducts Operational Development and writes HOSIP Stage 4 documents.		Not Started
Conduct an official test of the Shell Control Service.	Q4	Not Started
Conduct tests with RFS ensemble programs.	Q1 FY06	Not Started
Pass HOSIP Gate 4.	TBD	Not Started

Accomplishments/Actions – 1st Quarter FY05

We completed project identification, budgeting, and planning.

Problems, Issues, and Notes or Comments – 1st Quarter FY05

Notes:

HOSIP Stage 1 (**INPUT**) documents: Need Identification Document (NID), Statement Of Need (SON).

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Distributed Hydrologic Model Software

Theme: Short- to Long-Term Forecasts

Management Lead: Jon Roe

Objective: Incrementally develop and nationally deliver components of distributed hydrologic modeling software within the evolving CHPS architecture.

Milestones

Task	Due Date	Status
Expose this project to the larger NWS OSI Process in order to eventually make use of existing AWIPS capabilities for grid display and manipulation.	Q1	Complete
Adjust HOSIP Stage 1 documents and submit to OSIP.	Q1	Complete
Pass OSIP Gate 1.	Q2	Complete
Identification of first increment high-priority requirements, including requirements related to model computations, data display and manipulation, and operational considerations.	Q2	Complete
Adjust HOSIP Stage 2 documents and submit to OSIP.	Q2	Complete
Perform due diligence of a selection of existing hydrologic modeling systems used to process, display and manipulate grid-based data.	Q2	In Progress
Pass OSIP Gate 2.	Q2	Upcoming February
Adjust HOSIP Stage 3 documents and submit to OSIP.	Q2	In Progress
Pass OSIP Gate 3.	Q3	Upcoming June
Perform architectural design development for first increment, including database, computational, display, data assimilation, calibration and operational considerations.	Q4	Not Started
Develop first increment prototype architecture.	Q1, FY06	Not Started
Evaluate architectural design and make updates to architectural scheme and implementation.	Q2, FY06	Not Started
Perform HOSIP Stage 4 development for first increment targeted for AWIPS Release OB7.	Q3, FY06	Not Started
Pass HOSIP Gate 4 for first increment.	Q3, FY06	Not Started
Iterate back for the next increment of operational development against the Gate 3 requirements.	TBD	Not Started

Accomplishments/Actions – 1st Quarter FY05

- WGRFC, ABRFC, and OHD agreed on a subset of high-priority functional requirements for the first increment of software development.
- In the second quarter OHD has started to evaluate existing modeling

systems, including technical meetings with the USGS and ARS-USDA to identify systems or features of existing systems potentially useful for operational distributed hydrologic modeling.

Problems, Issues, and Notes or Comments – 1st Quarter FY05

- Because some of the identified operational functional requirements are closely related to issues being addressed through software development in other parts of the NWS (e.g., developing software to display and manipulate grids), the project was promoted into the NWS's, Operational Service Improvement Process (OSIP) during the first quarter. This required adjustments to already existing HOSIP documentation which was performed in the first quarter and continues into the second quarter.
- Since this AHPS project was lightly funded for FY05, progress will be slower than seen in FY04. OHD is adding some AWIPS funding support to keep the project moving. The weak funding profile could cause milestones above to slip over time.

HOSIP Stage 1 (**INPUT**) documents: Need Identification Document (NID), Statement Of Need (SON).

HOSIP Stage 2 (**VALIDATION**) documents: Concept Of Operations (CONOPS) including high level functional requirements, initial Business Case Analysis (BCA), Stage 3 plan.

HOSIP Stage 3 (**RESEARCH & ANALYSIS**) documents: updated CONOPS with lower level functional requirements, scientific algorithm documentation (if applicable), updated BCA, Stage 4 plan.

HOSIP Stage 4 (**OPERATIONAL DEVELOPMENT**) documents: updated CONOPS with technical requirements, Design Specification, Test Plan, Test Procedures, Test Results, software code, release notes, installation instructions, training materials, user manual materials, and system manual materials.

Graphical Dissemination of Hydrologic Information

Flood Inundation Map Development

Theme: Graphical Dissemination of Hydrologic Information

Management Lead: Janice Sylvestre

Objective: Develop the capability to generate and display flood inundation maps

Milestones

Task	Due Date	Status
Evaluate PA flood maps	Q4	On schedule
Merge OHD and NOS flood inundation maps	Q4	On schedule
Integrate SHRT into the AWIPS (HOSIP Gate 3)	Q4	On schedule

Accomplishments/Actions – 1st Quarter FY05

- *Evaluate PA Flood Maps*: High water marks for a few areas in the Susquehanna River System and orthophoto image data for the state of PA during Hurricane Ivan were obtained; preliminary flood forecast maps were generated for the Hurricane Ivan event; and a preliminary comparison was made for the Harrisburg area; started developing HOSIP documents (NID) for FLDVIEW.
- *Merge OHD & NOS Flood Inundation Maps*: The NWS flood forecast map generated with FLDWAV is being compared to the NOS grid; preliminary results show that the water level data is essentially the same except near the mouth of the river which may be due to the use of different bathymetric data; currently investigating further; started developing HOSIP documents for the integrated flood map project.
- *Integrate SHRT into AWIPS*: Started developing HOSIP documents for SHRT (the development of the prototype was completed in FY04).

Problems Encountered/Issues – 1st Quarter FY05

Because of reduced funding the following adjustments are made to tasks:

- All maps will be validated but the due date is moved to Q4

Flood Map Evaluation and E-19 Map Development

Theme: Graphical Dissemination of Hydrologic Information

Management Lead: Doug Marcy, CSC

Objective: Provide new graphic tools for river and flood forecast operations; and deliver new GIS-based display of water resources information to better meet customer needs.

To produce and disseminate hydrologic and forecast information such as E-19's and inundation maps in a format that would help customers and managers to visualize the impact of water levels. This will aid the decision makers regarding actions to be taken to protect people and property.

Milestones

Task / Deliverables	Due Date	Status
Evaluate Tar Flood Maps • Provide report documenting the evaluation of the accuracy of the forecast maps for the Tar River Basin and modeling and mapping methods and lessons learned.	Q2	In progress: Modeling and mapping methods and lessons learned document already completed
Develop method to generated flood maps from E19 info • Provide report documenting the methodologies developed for E-19 mapping at selected forecast sites. This report will also include E-19 maps for the selected areas • Provide GIS data layers from E-19 mapping effort to CRH for use in the ArcIMS mapping project.	Q4	In progress: Workshop on E-19 development and usage given at HPMC conference in December 04 FEMA pilot in Johnson County, KS products will be given to CRH for ArcIMS prototype.
Flood mapping implementation documentation • Develop materials to assist field offices in utilizing the flood mapping prototype software. Package to include information outlining sources of data, system requirements, software documentation and training materials for personnel to produce flood inundation maps for a new location.	Q4	In progress: Presentations for flood forecast mapping and e-19 development and usage already compiled and available through 2nd HPMC website.
Evaluate existing map dissemination processes • Report summarizing the evaluation of existing map dissemination processes.	Q4	Collaboration with OHD and CRH to write report to begin soon

Accomplishments/Actions – 1st Quarter FY05

- Executive summary titled "Flood Forecast Mapping in the Tar River Basin, North Carolina: Project Summary and Lessons Learned" completed and submitted to SERFC and OHD.

- Presentation on NWS flood forecast mapping overview given at the Second Hydrologic Program Managers Conference (HPMC) in New Orleans December 6-10, 2004. PowerPoint slides are available through HPMC website.
  http://www.nws.noaa.gov/om/water/hpm_conference/Presentations.shtml

- Workshop on graphical E-19 development and usage was given to over 60 hydrologic program managers at the Second HPMC in New Orleans December 6-10, 2004. PowerPoint slides, discussion points, and results from informal survey are available on HPMC website.
  http://www.nws.noaa.gov/om/water/hpm_conference/subject.shtml

- Johnson County, KS pilot with FEMA began in November 2004 with a kickoff meeting with FEMA and Johnson County. County is in the process of getting a quote for mapping NWS flood categories. Pilot should finish before Quarter 4 and products will be made available to CRH for ArcIMS application.

- In addition, FEMA Q3 and DFIRM maps showing 1% and 0.2% chance flood inundation extents were created by CSC for FEMA Region IV and are added as downloadable extension to HURREVAC.

Problems Encountered/Issues – 1st Quarter FY05

None except transfer of AHPS funds to CSC for existing and completed work.

FLDVIEW Data Interface (XML)

Theme: Graphical Dissemination of Hydrologic Information

Management Lead: Jon Roe

Objective: To define a standard data interface, using XML, to be used to provide data from flood routing models (e.g., FLDWAV) to flood mapping applications (e.g., FLDVIEW).

Milestones

Task	Due Date	Status
Write the requirements of this project so as to incorporate them into the Statement Of Objectives (SOO) for the related AHPS task, "Expand HydroXC", within the CHPS project under the Software Infrastructure and Integration Theme. This FLDVIEW interface project will become a sub-task within the larger "Expand HydroXC" task.	Q2	Not Started
Incorporate FLDVIEW SOO requirements into the "Expand HydroXC" parent SOO.	Q3	Not Started
Review sections of the larger "CHPS: Expand HydroXC" Statement Of Work (SOW) from the contractor that pertain to this project.	Q4	Not Started
All future milestones for this project are found in the "CHPS: Expand HydroXC" AHPS reports as this work will be absorbed there.	N/A	N/A

Accomplishments/Actions – 1st Quarter FY05

We completed project identification, budgeting, and planning.

Problems, Issues, and Notes or Comments – 1st Quarter FY05

The final completion of the AHPS project to incorporate the Simplified Hydrologic Routing Technique (SHRT) in NWSRFS depends on the results of this project as this project will define the output data interface between SHRT and FLDVIEW. A "pre-final" version of SHRT, without the interface developed here, can be accomplished but will have to be re-visited and completed after this project.

This FLDVIEW Data Interface (XML) AHPS project plan/report will only cover the integration of this work under the larger CHPS projects reported elsewhere (see the "Expand HydroXC" section of the CHPS AHPS reports).

The allotted funding for this data interface task is well under what is required to complete the task. It will only get started in FY05 and must get completed in FY06 pending FY06 financial support.

GIS Based Information Dissemination System

Theme: Graphical Dissemination of Hydrologic Information

Management Lead: Wendy Pearson, CRH (Dr. Shripad Deo, CIRA, Brian Connelly, NCRFC and Eugene Derner, MBRFC)

Objective: Develop a GIS-based display system to present a variety of hydrologic information to meet the needs of local, regional, and national users

Milestones

Task	Due Date	Status
Provide training for IMS system	Sep 2003	Complete
Hardware and software procured and installed	Sep 2003	Complete
Contract support allocated for IMS development work	Sep 2003	Complete
Develop GIS-based information dissemination system	Sep 2004	Ongoing
Additional Hardware and software procurement	March 2005	
Modify national AHPS map service to use .xml files	July 2005	
Install additional hardware and software	July 2005	
Stress Test new hardware and software configuration	Sep 2005	
Incorporate graphical E19	Sep 2005	
Evaluation of prototype and recommendations	Sep 2005	

Accomplishments/Actions – 1st Quarter FY05

Wrapped up development of ArcIMS web service (very similar to static national AHPS web page) fed real-time .mxd files. The ESRI ArcIMS system allows for customer selectable graphics to zoom to the level of interest and obtain information about the river gauge locations.

Created project plans for FY05 to work with OHD and Coastal Services Center:
1. Evaluate prototype ArcIMS system design
2. Incorporate graphical E19s in CRH project
3. Recommend some products for ArcIMS dissemination

Planned for MySQL database to feed ArcIMS.

Problems Encountered/Issues – 1st Quarter FY05

Halted work on IMS web service, very similar to static national AHPS web page, due to transition from .mxd files to .xml files by contractor, John Bollinger. Will

resume work on this IMS web service when .xml files are fed to CR web farm.

Future Enhancements for FY05-FY08

Ingest real-time .xml data into ArcIMS system to allow the display of current and forecast conditions.

Link to live AHPS web pages for seamless Internet navigation.

Implement MySQL and SDE in CRH ArcIMS prototype.

Incorporate FLDIMS project into CRH ArcIMS prototype.

Incorporate census data in this system to enhance hydrologic outlooks, watches, and warnings by taking today's NWS wording of a hazard of major flooding with river levels rising to 28 feet on the Missouri River in Jackson county Missouri, to… "***There is a threat of major flooding with the river rising to 28 feet on the Missouri River in Jackson county in Missouri with potentially 300,000 people and 75,000 homes and businesses likely to be affected***."

Work with CRH Climate Services, to incorporate low flow database information in graphical format utilizing ArcIMS.

Explore graphical dissemination of ESPADP digital data, NDFD shapefiles, NWS Doppler radar shapefiles, precipitation data, water supply information, water quality information, and climate data.

Product Dissemination

Theme: Graphical Dissemination of Hydrologic Information

Management Lead: Janice Sylvestre

Objective: Identify products and ways of graphically disseminating hydrologic and forecast information in a format that would help customers and managers to visualize the impact of water levels. This will aid the decision makers regarding actions to be take to protect people and property.

Milestones

Task	Due Date	Status
Convert FLDIMS MapGuide templates to ArcIMS	Q4	On schedule
Develop FLDIMS template for St. Johns River	Q4	On schedule
Evaluate existing map dissemination processes	Q1 (FY06)	On schedule

Accomplishments/Actions – 1st Quarter FY05

- *Convert FLDIMS MapGuide Templates to ArcIMS*: worked continued on the development of the template for Harrisburg
- *Develop FLDIMS template for St. Johns River*: A MapGuide template was developed for the SJR and populated with data for Hurricane Frances.
- Started developing HOSIP documents for FLDIMS

Problems Encountered/Issues – 1st Quarter FY05

Because of reduced funding the following adjustments are made to tasks:

- In addition to the Harrisburg area, only the West Branch of the Susquehanna River area will be modeled due to limited funding; also the due date is moved to Q4.
- The St. Johns River FLDIMS template will be in the MapGuide format only due to limited funding.
- Due to the lateness of the allocation of funds, this task will begin in March and end in Dec ’05.

Basic Service Implementation

AHPS Implementation APRFC

Management Lead: Scott Lindsey, APRFC

Objective: To calibrate NWSRFS data sparse basins and validate quality of resulting probabilistic forecasts generated at those locations to allow implementation of advanced hydrologic prediction services (AHPS) in the Koyukuk Basin; calibrate and implement AHPS at six new locations.

Milestones

Task	Due Date	Status
Implement two new AHPS sites	Dec. 2004	Complete – Anchor River and Willow Creek
Send additional data to Dr. Eric Anderson	March 2005	
Complete calibration of four new sites	June 2005	
Implement four new sites	Sept. 2005	
Report on status of calibration efforts on Koyukuk Basin	Sept. 2005	

Accomplishments/Actions – 1st Quarter FY05

AHPS sites were implemented for the Anchor River at Anchor Point and Willow Creek at the Parks Highway.

Problems Encountered/Issues – 1st Quarter FY05

None

Snow Water Equivalent Data

Management Lead: Larry Rundquist, APRFC

Objective: Acquire high quality, high resolution airborne gamma radiation snow water equivalent for flight lines in Alaska; this should improve accuracy and lead time of hydrologic forecasts by providing high quality input to forecast operations in data sparse areas

Milestones

Task	Due Date	Status
Identify priority of flight lines - APRFC	March 2005	
Fly selected operational flight lines	April 2005	
Incorporate data into operations	June 2005	

Accomplishments/Actions – 1st Quarter FY05

None

Problems Encountered/Issues – 1st Quarter FY05

None

AHPS Implementation for NCRFC

Management Lead: Dan Luna, HIC/NCRFC

Objective: Implement probabilistic hydrologic forecasts for basins in the North Central River Forecast Center's (NCRFC) area of responsibility

Milestones

Implementation Area	Forecast Points Planned	Due Date	Actual to Date	Variance
	*			
Total				

* None planned in FY05

Accomplishments/Actions – 1sr Quarter FY05

All AHPS points implemented for long-term forecasts

Problems Encountered/Issues – 1st Quarter FY05

None

AHPS Implementation for MBRFC

Management Lead: Larry Black, HIC/MBRFC

Objective: Implement probabilistic hydrologic forecasts for basins in the Missouri Basin River Forecast Center's (MBRFC) area of responsibility. The MBRFC goal is to have 21 additional AHPS points implemented for long-term forecasts by the end of FY 2005.

Milestones

Implementation Area	Forecast Points Planned	Due Date	Actual to Date (1st Qtr FY05)	Variance
Grand-Chariton Basin	12	4th Qtr FY05	0	0
Middle Dakota Tributaries	9	4th Qtr FY05	0	0
Total	**21**	**FY05**	**0**	**0**

Accomplishments/Actions – 1sr Quarter FY05

- Completed 80% of the headwater calibrations in the Middle Dakota Tribs
- Completed 40% of updates to reservoir operations in Middle Dakota Tribs
- Initiated headwater calibrations in the Grand

Problems Encountered/Issues – 1st Quarter FY05

- None

AHPS Implementation for MARFC

Management Lead: Peter Ahnert (HIC/MARFC), Joe Ostrowski (DOH)

Objective: Implement probabilistic hydrologic forecasts for basins in the Middle Atlantic River Forecast Center's (MARFC) area of responsibility. The MARFC goal is to have basic AHPS implementation for long-term forecasts for the entire MARFC area of responsibility by the end of FY 2005.

Milestones

Implementation Area	Forecast Points Planned	Due Date	Actual to Date (1st Qtr FY05)	Variance
James/Appomattox Basins	14	1st Qtr	14 (1st Qtr)	0
Total	**14**	**FY05**	**14**	**0**

Accomplishments/Actions – 1st Quarter FY05

MARFC added 14 points on the James/Appomattox basins to their suite of AHPS products. **With the addition of these products, MARFC has completed Basic AHPS implementation for their entire service area.**

Susquehanna Basin:	59 points	
Delaware Basin:	30 points	
NJ Basin:	19 points	
Potomac Basin:	29 points	
James Basin:	14 points	(completed in October 2004)

Total:	151 points	

The NWS (OHD and ER) is in the final stages of developing GIS applications to demonstrate Flood Inundation Mapping in the Susquehanna River Basin at Harrisburg, PA.

Problems Encountered/Issues – 1st Quarter FY05

None

AHPS Implementation for NERFC

Management Lead: Gregg Rishell (HIC/NERFC), Robert Shedd (DOH)

Objective: Implement probabilistic hydrologic forecasts for basins in the Northeast River Forecast Center's (NERFC) area of responsibility. The NERFC goal is to have AHPS implementation for long-term forecasts for the entire NERFC area of responsibility by the end of FY 2009.

Milestones

Implementation Area	Forecast Points Planned	Due Date FY05	Actual to Date (1st Qtr FY05)	Variance
Hudson R. Basin	22	14 (1st Qtr) 8 (4th Qtr)	14 (1st Qtr)	0
Adirondacks	5	4th Qtr.	0	0
Total	**27**	**FY05**	**14**	**0**

Accomplishments/Actions – 1st Quarter FY05

14 new forecast points were added this quarter in the upper Hudson River Basin.

The Hudson River calibration task by RTI has been completed and accepted.

Two NERFC staffers traveled to Ft Collins in October to meet with RTI representatives…. review progress and calibrations.

NERFC staff met with the Hydraulics and Hydrology Technical Working Group (HHTWG) of the International Joint Commission (IJC) this past Summer in Montreal to discuss several items of the International Lake Ontario - Saint Lawrence River Study including the future forecasting by NERFC, and the future climate change scenarios. This 5 year study is to determine if and how improvements can be made in the way lake levels and outflows from the Lake Ontario-St. Lawrence River system are managed.

In FY 2005, NERFC is planning new forecast capabilities, including AHPS, on five rivers originating in the Adirondack Mountains in New York that travel northward to the Saint Lawrence River. Although this is a data sparse area in upstate New York, enough is available to allow calibration of these watersheds using the Sacramento Soil Moisture Accounting Model (SAC-SMA). The NERFC is teaming with Riverside Technologies Inc. (RTi) with the calibration of each of these

watersheds. The importance of forecasting for these five rivers was evident by the Canadian response to our involvement in this project. Even though these rivers comprise a small percentage of the entire Great Lakes/Ottawa River/Saint Lawrence basin, during the spring snow melt season they account for nearly 20 percent of the flow. Canadian Hydro users are also interested in this forecasting capability on a daily basis for their own power operations.

The calibration work by RTI in the Adirondacks to support the IJC project is ongoing.

Problems Encountered/Issues – 1st Quarter FY05

In the Adirondacks implementation sponsored by the IJC, there has been a problem in obtaining data to support calibrations at Cary Falls Reservoir. The reservoir is now under new ownership, and NERFC needs to go to FERC to get a release of the data. As a result, the Adirondacks calibration will be requesting a 2-month no-cost extension. Implementation is still expected in FY 2005.

AHPS Implementation for OHRFC

Management Lead: Craig Hunter (HIC/OHRFC), Tom Adams (DOH)

Objective Implement probabilistic hydrologic forecasts for basins in the Ohio River Forecast Center's (OHRFC) area of responsibility. The OHRFC goal is to have basic AHPS implementation for all existing long-term forecast points in the OHRFC area of responsibility by the end of FY 2006.

Milestones

Implementation Area	Forecast Points Planned	Due Date	Actual to Date 1st Qtr FY05	Variance
Lower Ohio River (OHS)	8	4th Qtr	0	0
Wabash River	22	4th Qtr	0	0
Total	**30**	**FY05**	**0**	**0**

Accomplishments/Actions – 1st Quarter FY05

OHRFC is currently experiencing widespread flooding in their service area.

In FY 2005, OHRFC will complete implementation of new AHPS forecast points in the Wabash River Basin and lower Ohio River (down to Shawneetown, IL).

IN FY 2005, OHRFC will start calibration on the lower Cumberland River. To accomplish this task, 9 Res-J (RTI assistance), 4 Res-SNGL (OHRFC staff) reservoir model implementation, along with SAC-SMA/SNOW-17/Routing model calibrations (OHRFC staff) are needed.

OHRFC staff has begun work on SAC-SMA calibrations on the Cumberland and Wabash River basins.

Full AHPS implementation of basins planned for implementation in FY2005 are proceeding on track.

Problems Encountered/Issues – 1st Quarter FY05

None

AHPS Implementation for ABRFC

Management Lead: Billy Olsen, HIC

Objective: Implement probabilistic hydrologic forecasts for basins in the Arkansas- Red Basin River Forecast Center's (ABRFC) area of responsibility.

Milestones

Implementation Area	Forecast Points Planned	Due Date FY05	Actual to Date 1st Qtr FY05	Variance
Verdigris	9	3rd Qtr	0	0
Cottonwood	5	3rd Qtr	0	0
Neosho	9	3rd Qtr	0	0
Arkansas	2	1st Qtr	2	0
Cimarron	11	1st Qtr	11	0
Total	**36**	**FY05**	**13**	**0**

Accomplishments/Actions – 1st Quarter FY05

- Work continues on the Short Term QPF Ensemble Forecast project in coordination with OHD.
- Provided comments on the AHPS Strategic Plan draft to Donna Page, Gary Carter and Tom Graziano.
- Participated in the conference calls of the national AHPS Short to Long Term Forecast Planning Team to produce a prioritized list of tasks for inclusion in team input to the ARC.
- Work continues on the DHMS project with three staff members involved in distributed model calibration activity. Tested the upgraded XDMS and HL-DMS software and provided comments to OHD. Reviewed XDMS documentation.
- Implemented a SR Intranet supported comment exchange area for DMS work. Coordinated with OHD concerning the archive of HL-DMS model output.
- Work continues with NWS-OHD concerning the AHPS task to include ABRFC P3 88-D precipitation estimation software functionality in MPE. Tasks completed included writing some P3 documentation for OHD and participating in conference calls.
- Submitted the SOO for ABRFC FY-05 data analysis contractor task.
- Implemented thirteen forecast points this quarter (carryover from FY-04).

Problems Encountered/Issues – 1st Quarter FY05

- FY05 funding has not been approved for the ABRFC historical data analysis task to be performed by contractor.

AHPS Implementation for LMRFC

Management Lead: Dave Reed, HIC

Objective: Implement probabilistic hydrologic forecasts for basins in the Lower Mississippi River Forecast Center's (LMRFC) area of responsibility.

Milestones:

Implementation Area	Forecast Points Planned	Due Date **FY05**	Actual to Date (**1st Qtr FY05**)	Variance
Duck Basin, TN	3 1	3rd Q 4th Q	0	0
Buffalo Basin, TN	1	4th Q	0	0
Elk Basin, TN	2	4th Q	0	0
Total	**7**	**FY05**	**0**	**0**

Accomplishments/Actions – 1st Quarter FY05

All planned FY04 AHPS objectives were completed as scheduled.

Initial preparations were made for FY05 RES-J and SAC-SMA basin calibration by RTi for 3 reservoirs and 5 headwater basins.

LMRFC participating in market research calls with RTi. RTi reviewing LMRFC proposal for FY05.

Draft SOO nearing completion.

LMRFC has reviewed/revised all required AHPS Project Manager documents.

Problems Encountered/Issues – 1st Quarter FY05

None

AHPS Implementation for SERFC

Management Lead: John Feldt, HIC

Objective Implement probabilistic hydrologic forecasts for basins in the Southeast River Forecast Center's (SERFC) area of responsibility. Our goal is to complete AHP basic services implementation by the end of FY2008 (assumes full AHPS funding).

Milestones

Implementation Area	Forecast Points Planned	Due Date	Actual to Date (1st Qtr FY05)	Variance
PeeDee	6	1st Qtr	6	0
	2	2nd Qtr		
Santee	4	2nd Qtr		
	2	3rd Qtr		
Total	**14**	**FY05**	**6**	**0**

Accomplishments/Actions – 1st Quarter FY05

Work is complete to incorporate operationally into NWSRFS the calibrations provided by RTi in October 2003.

Problems Encountered/Issues – 1st Quarter FY05

None

AHPS Implementation for WGRFC

Management Lead: Jerry M. Nunn

Objective: Implementation of probabilistic hydrologic forecasts for the West Gulf River Forecast Center (WGRFC) area of responsibility.

Milestones

Implementation Area	Forecast Points Planned	Due Date FY05	Actual to Date (1st Qtr FY05)	Variance
Trinity River	2	1st Quarter	2	0
	1	2nd Quarter		
	0	3rd Quarter		
	0	4th Quarter		
Total	**3**		**2**	**0**

Accomplishments/Actions – 1st Quarter FY05

RFC continues the calibration and dataset preparation for implementation of AHPS Basic Services on the remainder of the Trinity River – scheduled for 2nd Quarter FY05. We continue to develop and test selected watersheds on the Distributed Model as part of the DMIP. We are also working with OHD on testing and implementing VAR and the SSHP.

Problems Encountered/Issues – 1st Quarter FY05

None.

AHPS Implementation for CBRFC

Management Lead: David Brandon, HIC/CBRFC

Objective: Implement probabilistic hydrologic forecasts for 22 basins in the Colorado Basin River Forecast Center's (CBRFC) area of responsibility.

Milestones

Implementation Area	Forecast Points Planned	Due Date	Actual to Date (1st Qtr FY05)	Variance
Green Basin	22	9/30/05	0	0
Total	**22**	**FY05**	**0**	**0**

Accomplishments/Actions - 1st Quarter FY05

All sites have been calibrated. All sites are set up for ESP.

Problems Encountered/Issues - 1st Quarter FY05

None

AHPS Implementation CNRFC

Team Lead Robert Hartman, HIC/CNRFC

Objective Implement probabilistic hydrologic forecasts for 19 basins in the California-Nevada River Forecast Center's (CNRFC) area of responsibility.

Milestones

Implementation Area	Forecast Points Planned	Due Date	Actual to Date (1st Qtr FY05)	Variance
Southern California and Central California coast	19	9/30/05	0	0
Total	**19**	**FY05**	**0**	**0**

Accomplishments/Actions - 1st Quarter FY05

Continuing operational ESP implementation

Problems Encountered/Issues - 1st Quarter FY05

None

AHPS Implementation for NWRFC

Team Lead Harold Opitz, HIC/NWRFC

Objective Implement probabilistic hydrologic forecasts for 38 basins in the Northwest River Forecast Center's (NWRFC) area of responsibility.

Milestones

Implementation Area	Forecast Points Planned	Due Date	Actual to Date (1st Qtr FY05)	Variance
Kootenay, Pend d'Oreille, Clark Fork, Upper Columbia	38	9/30/05	0	0
Total	**38**	**FY04**	**0**	**0**

Accomplishments/Actions - 1st Quarter FY05

Continuing operational ESP implementation.

Problems Encountered/Issues - 1st Quarter FY05

None

Training

Hydrologic Science Training - COMET

Theme: Training

Management Lead – Jeff Zimmerman

Objective: Develop training and education materials to facilitate the implementation of new science and technologies into hydrologic operations.

Milestones

Task	Due Date	Status
Flash Flood Hydrology/QPE Workshop	1st Q	Complete
Flash Flood Hydrology/QPE Workshop	2nd Q	Complete
Develop Basic Hydro Science Distance Learning Course	4th Q	On-going

Accomplishments/Actions – 1st Quarter FY05

Completed delivery of the first of two Flash Flood Hydrology/QPE workshops.

Problems Encountered/Issues – 1st Quarter FY05

Due to budget shortfalls, the first offering of the Advanced Hydrologic Science residence course was cancelled in FY 2005. Work will continue on the development of the course, which will be proposed to be offered in FY 2006.

RFC/WFO Training

Theme: Training

Management Lead: Jeff Zimmerman

Objective: Provide a basic level of knowledge and understanding for WFO staff regarding the implementation of AHP services in their Hydrologic Service Area.

Milestones

Task	Due Date	Status
WGRFC/WFO HGX	2nd Q	Complete
CR RFC/WFO Activity	3rd Q	
SERFC/WFO TBW	3rd Q	
SERFC/WFO MLB & JAX	3rd Q	
ABRFC/WFO TOP	3rd Q	
ABRFC/WFO SGF	3rd Q	
LMRFC/WFO JAN	3rd Q	
LMRFC/WFO MEG	3rd Q	
CR RFC/WFO Activity	4th Q	
APRFC/WFO AFG/AJK	4th Q	
CNRFC/Supporting WFOs	4th Q	

Accomplishments/Actions – 1st Quarter FY05

None

Problems Encountered/Issues – 1st Quarter FY05

None

RFC/HPC Visiting Forecaster

Theme: Training

Management Lead: Peter Manousos, HPC Development and Training Branch

Objective: To improve understanding and cooperation between HPC forecasters and RFC hydrologists

Milestones

Task	Due Date	Status
1.Revise agenda for RFC visitors to HPC and HPC visitors to RFCs.	February 2005	In progress
2. Schedule and implement visits.	September 2005	In Progress

Accomplishments/Actions - **1st Quarter FY05**

Began planning for FY05 visits

Problems Encountered/Issues - **1st Quarter FY05**

None

River Hydraulics Tutorial

Theme: Training

Management Lead: Jeff Zimmerman

Objective: Develop tutorial that explains how to run the Simplified Dam Break model including data acquisition (i.e., cross section selection and the selection of dam break parameters).

Milestones

Task	Due Date	Status
Cross section tutorial	Q4	On schedule
How to run SMPDBK tutorial	Q4	On schedule

Accomplishments/Actions – 1st Quarter FY05

- Currently doing project planning; started developing HOSIP documents.

Problems Encountered/Issues – 1st Quarter FY05

None

Outreach

Outreach Work Plan

Theme: Outreach

Management Lead: Tom Graziano

Objectives: - Accomplish outreach with national, regional, and local partners and customers with local emphasis on locations where AHPS is being or will soon be implemented

- Develop clear and consistent AHPS outreach materials for use by national, regional, and local personnel

Milestones

Task	Org.	Due Date	Status
Develop Brochure: ***TADD*** w/National Safety Council Printing approx 300,000 copies and distribution Distribution via NSC (4,000)	OCWWS	2nd	Brochure development complete and PDF available via web Plan to have printed brochures available for distribution by May 2005
Develop Brochure: ***Floods the Awesome Power*** w/National Safety Council Printing approx 100,000 copies Distribution via NSC (4,000)	OCWWS	2nd	Brochure development will be complete and PDF available via web in March 2005 Plan to have printed brochures available for distribution by June 2005
Develop Brochure: ***Tropical Cyclone Inland Flooding*** Printing approx 200,000 copies	OCWWS	2nd	Brochure development will be complete and PDF available via web in March 2005 Plan to have printed brochures available for distribution by June 2005
Customer Regional Workshop (Pittsburgh, PA)	ER	2nd	On track
Customer Regional Workshop (Columbus, OH)	ER	3rd	On track
Customer Regional Workshop (Albany, NY)	ER	3rd	On track
Customer Regional Workshop (Boston, MA)	ER	3rd	On track
Customer Regional Workshop (MPX/LOT)	CR	3rd	On track
Customer Regional Workshop (LSX)	CR	3rd	On track
SERFC AHPS Customer Service Workshop (FDEM)	SR	3rd	On track
SERFC AHPS Educational Outreach	SR	3rd	On track
SERFC AHPS Briefings FL Gov Conference (travel 4,560 booth 1,000)	SR	3rd	On track
LMRFC WFO Jackson, COE District Office, MVD, MEMA, Pearl River Water Supply District AHPS Educational Material	SR	3rd	On track

LMRFC AHPS Brochures	SR	3rd	On track
WGRFC Trinity River Authority Educational Outreach	SR	3rd	On track
LMRFC WFO Memphis, Memphis COE District AHPS Educational Outreach	SR	3rd	On track
Brochure: AHPS Water Supply	WR	4th	On track
ABRFC AHPS Brochures	SR	4th	On track
ABRFC AHPS Customer Service Workshop	SR	4th	On track

Accomplishments/Actions – 1st Quarter FY05

- Updated AHPS Toolbox with new outreach resources including PSAs
- Established outreach resource page in support of Flood Safety Awareness week (http://weather.gov/floodsafety/)

Problems Encountered/Issues – 1st Quarter FY05

None

Program Management

Program Management Activities

Theme: Program Management

Management Lead: John Ingram, OHD

Objectives: Provide national program management; coordinate and track AHPS budgets and project plans; manage AHPS contracts; and foster Agency, Departmental, and Legislative Interface.

Milestones

Deliverable	Quarter			
	1st	2nd	3rd	4th
AHPS Planning/Execution/Reporting				
• Planning				
o Update Implementation Plan		X		
o Define goals and required resources for enhanced AHPS implementation			X	
o Develop Standards for ESP products			X	
o Update 'OMB 300' Documentation				X
• Execution/Reporting				
o Quad Charts (monthly)	X	X	X	X
o Financial Status Report (monthly)	X	X	X	X
o Quarterly Status Report	X	X	X	X
o Earned Value Report to OMB (monthly)	X	X	X	X
NOAA PPBES Hydrology Program Support				
• Planning				
o Provide input to NOAA Strategic Plan and Annual Guidance Memorandum		X		
o Conduct Program Baseline Assessment			X	
o Update Program Plan				X
• Execution/Reporting				
o Provide Performance Charts (monthly)	X	X	X	X
o Quad Charts (monthly)	X	X	X	X
o Quarterly Program Review	X	X	X	X
Agency/Departmental/Legislative Interfaces				
• Develop Budget documentation				
o Budget Fact Sheet	X			
o Prepare and submit Budget Request		X		
• Support NWS/NOAA/DOC Budget submission				
o Prepare briefings and support OMB/Congressional meetings			X	
o Prepare response to NOAA/DOC/OMB Pass Backs			X	
o Prepare response to Budget Hearing questions				X
Hydrology Operations & Service Improvement				
• OHD System Management (HOSIP, Hydrology Operations & Service Improvement)				
o HOSIP Instructions	X		X	
o HOSIP Templates		X		X
o HOSIP Guidelines & Standards		X		
o Performance Statistics			X	
• NWS System Management (OSIP, Operations & Service Improvement)				
o NWS Gate Status Reports	X	X	X	X
o NWS OSIP Validation & Recommendation Report		X		X
Probabilistic Performance Measure				
• Description of probabilistic performance measure		X		
• Define data collection requirements			X	

Accomplishments/Actions – 1st Quarter FY05

All 1st Quarter deliverables were provided.

Problems Encountered/Issues – 1st Quarter FY05

None

Web Page Deployment

AHPS Web Page Activities

Theme: Web Page Deployment

Management Lead: Donna Page

Objective: Provide a standard look and feel for the presentation of AHPS hydrologic and forecast information on the World Wide Web by all NWS weather offices. Also, complete the implementation of a single national database that aggregates information on hydrologic observation and service locations used by WFOs and RFCs.

Milestones

Task	Due Date	Status
AHPS Web Page Maintenance/Support	September, 2005	Ongoing
Phase I Development/Implementation		
• HydroGen available on LAD (field offices, web farm)	March, 2005	On schedule
• HydroGen delivery to AWIPS	February, 2005	On schedule
• Standardize National Map	March, 2005	In progress
• Standard Map background	May, 2005	Start in April
• National River Locations database (Phase 1)	January, 2005	In progress
Systems Architecture Document	April, 2005	In progress
Implementation Meeting (Phase I)	March, 2005	May change date
AHPS Web Page Enhancements (Phase II) TBD by March, 2005 According to Consistent Web Framework	September, 2005	Defining scope of work
Implementation Meeting (Phase III)	September, 2005	TBD

Accomplishments/Actions – 1st Quarter FY05

Phase I development of AHPS Configuration Management System (AHPS CMS) interface was completed. AHPS CGI and HSA PHP map scripts modified to use data from AHPS CMS database. AHPS CMS was implemented in AR, CR, ER, and WR. Over 170 users added to AHPS CMS during this period. In addition, Phase II planning began with the OCWWS/HSD delivery of the requirements in mid December. OHD will respond with a proposed work plan in January.

Problems Encountered/Issues – 1st Quarter FY05

A few delays in implementation of the CMS were encountered due to the active weather – mainly the hurricanes in SR. All regions have since implemented the CMS.

Collaborative Research

On-going Competitive and Collaborative Research

Theme: Collaborative Research

Management Lead: Pedro J. Restrepo

Objective: Coordinate the evaluation and management of the collaborative grants program

Milestones

Task	Due Date	Status
On-going competitive grants- Renewal	March 4	In progress
Collaborative grants	March 4	In progress

Accomplishments/Actions – 1st Quarter FY05

We received 27 pre-proposals for new competitive grants. There was no money in the budget to award new grants. All proposers were notified and the process terminated.
We received progress reports from 3 of the 4 on-going competitive grants. As of today, we also hosted a seminar on the research grant from the U. of Arizona. We will be hosting seminars from the U.of Colorado, U. of Iowa and Central Florida University on Monday, February 7.
We received a proposal for continuation of a collaborative research from Shripad Deo at CIRA. We requested a re-scope of the proposal which was received and is being evaluated

Problems Encountered/Issues – 1st Quarter FY05

Apart from the reduced amount of funding, there have been no problems

Software Infrastructure and Integration

Streamflow Regulation Accounting

Theme: Software Infrastructure and Integration

Management Lead: Janice Sylvestre

Objective: To continue the development of a strategy for AHPS implementation for river basins where the regulation of stream flow is substantial. This strategy will enable MBRFC and other RFCs to effectively account for the effects of this regulation in their conditional simulations in ESP and thereby provide consistent, accurate, science-infused long-range probabilistic forecasts.

Milestones

Task	Due Date	Status
Implement SRA on the Cache la Poudre River sub-basin	Q2	On schedule
Implement SRA on a TDB area of the St. Platte River system	Q1 (FY06)	On schedule

Accomplishments/Actions – 1st Quarter FY05

Work began on the implementation of the Cache la Poudre sub basin; calibration of the system was done for the three approaches; two MBRFC staff members visited RTI to collaborate on regulation modeling of the Cache la Poudre sub-basin; a specific plan for implementation was developed, documented, and is now being executed.

Problems Encountered/Issues – 1st Quarter FY05

None

Streamflow Regulation Tools

Theme: Software Infrastructure and Integration

Management Lead: Janice Sylvestre

Objective: To enhance existing NWSRFS models to aid with modeling the Streamflow Regulation

Milestones

	Due Date	Status
OHD write HOSIP Need Identification Document	Q2	
Pass HOSIP Gate 1.	Q2	
OHD write Statement of Objectives for task and deliver to Contracts.	Q2	
OHD Review/Accept Statement of Work from Contractor	Q3	
OHD Receive HOSIP Gate 2 documents	Q4	
Pass HOSIP Gate 2.	Q4	
OHD Receive HOSIP Gate 3 documents	Q4	
Pass HOSIP Gate 3.	Q4	
OHD receive/review HOSIP Gate 4 design documents	Q4	
OHD receive and MBRFC review HOSIP Gate 4 test documents	Q4	
OHD receive contractor developed code and deliver OHD compiled code to MBRFC	Q4	
MBRFC test functions	Q1 FY06	
OHD Receive remainder of HOSIP Gate 4 documents	Q1 FY06	
Pass HOSIP Gate 4	Q2 FY06	

Accomplishments/Actions – 1st Quarter FY05

Project planning

Problems Encountered/Issues – 1st Quarter FY05

We will be asking the contractor to complete the enhancements listed below in our Statement of Objectives. The schedule and the number of tasks we complete will depend upon the response from the contractor.

The Contractor will also be responsible for writing all HOSIP Gate 2, 3, and 4 documents.
Gate 2 documents include the Concept of Operations, Business Case, Operational

Requirements Document, Statement of Need, Work Plan.
Gate 3 documents include Detailed requirements
Gate 4 documents include Design documents, Test Plan, Test Procedures, Test Results, code, Training Materials, User manuals, and System manuals.

Items below may be updated with input from the MBRFC.

a.) Currently, the CONS_USE operation requires specification of an input streamflow time series from which the diversion will be withdrawn. Make specification of the input time series optional to make it easier to simulate a case where the water source is a reservoir.

b.) Currently, CONS_USE return flows are assumed to return to the diversion point and are available for diversion. In many cases return flows return well downstream of the diversion point, or even exit the basin. Allow the user to specify if the return flows are available for diversion to provide the user more flexibility in the use of the operation.

c.) Include an option in the CONS_USE operation to have the operation compute return flows only, and to do so based on a given diversion time series. This would reflect situations where the actual diversion and subsequent return flow were limited by factors other than those currently considered in the operation.

d.) Enhance the LOOKUP3 operation to allow a date to be specified as one of the independent variables.

River Ensemble Processor Software Architecture

Theme: Software Infrastructure and Integration

Management Lead: Jon Roe

Objective: To continue the definition and development of a new software architecture and infrastructure to support NWS hydrologic operations. Currently, there are four separate, yet related, areas of work. They are the Data Services prototype, the operational connection to ResSIM, the MAT architecture shell, and the expansion of the Hydrologic XML Consortium work. Specifically, the AHPS FY05 request is to move forward in the last two areas mentioned as outlined below. The Data Services prototype work is a continuation of AHPS FY04 CHPS tasking while the ResSIM connection work is being sponsored by a request from the State of California.

Milestones

Task	Due Date	Status
MAT Architecture Shell		
Write HOSIP Stage 1 documents.	Q2	Not Started
Pass HOSIP Gate 1.	Q2	Not Started
Write Statement Of Objectives (SOO) for contractor tasking.	Q2	Not Started
Review Statement Of Work (SOW) from contractor.	Q3	Not Started
Contractor and OHD conduct Validation and write HOSIP Stage 2 documents.	Q3	Not Started
Pass HOSIP Gate 2.	Q3	Not Started
Contractor conducts Research & Analysis and writes HOSIP Stage 3 documents.	Q4	Not Started
Pass HOSIP Gate 3.	Q4	Not Started
Expand HydroXC		
Write Statement Of Objectives (SOO) for contractor tasking to continue the overall expansion of the Hydrologic XML Consortium.	Q3	Not Started
Incorporate the requirements of the “FLDVIEW Data Interface (XML)” project into the SOO. The FLDVIEW interface project will become a sub-task within this larger “Expand HydroXC” task.	Q3	Not Started
Review Statement Of Work (SOW) from contractor.	Q4	Not Started
For sub-task “FLDVIEW Data Interface (XML)”, conduct complete four stage HOSIP project to be delivered to AWIPS (milestone details TBD at this time).	TBD	Not Started

Task	Due Date	Status
Additional deliverables for the larger "Expand HydroXC" task depend upon the results of the upcoming HydroXC Symposium in Spring 2005.	N/A	N/A

Accomplishments/Actions – 1st Quarter FY05

We completed project identification, budgeting, and planning.

Problems, Issues, and Notes or Comments – 1st Quarter FY05

This CHPS AHPS project plan/report will cover the sub-task FLDVIEW Data Integration (XML) as soon as the FLDVIEW Data Integration (XML) requirements are incorporated into this CHPS project.

The allotted funding for the FLDVIEW Data Interface (XML) sub-task is well under what is required to complete the sub-task. It will only get started in FY05 and must get completed in FY06 pending FY06 financial support.

HOSIP Stage 1 (**INPUT**) documents: Need Identification Document (NID), Statement Of Need (SON).

HOSIP Stage 2 (**VALIDATION**) documents: Concept Of Operations (CONOPS) including high level functional requirements, initial Business Case Analysis (BCA), Stage 3 plan.

HOSIP Stage 3 (**RESEARCH & ANALYSIS**) documents: updated CONOPS with lower level functional requirements, scientific algorithm documentation (if applicable), updated BCA, Stage 4 plan.

HOSIP Stage 4 (**OPERATIONAL DEVELOPMENT**) documents: updated CONOPS with technical requirements, Design Specification, Test Plan, Test Procedures, Test Results, software code, release notes, installation instructions, training materials, user manual materials, and system manual materials.

MAT algorithms for NWRFC

Theme: Software Infrastructure and Integration

Management Lead: David Kitzmiller

Objective: Provide modified statistical weights for estimating 6-hour average temperature from maximum and minimum values, specific to NWRFC region

Milestones

Task	Due Date	Status
Derive new weights from NCDC hourly temperatures	Jan 31, 2005	Done
Implement option to select new sets of weights, in AWIPS	March 31, 2005	On track

Accomplishments/Actions – 1st Quarter FY05

Derived 4 sets of weights, for 3-month seasons, using data from NCDC.

Results reviewed and approved by Don Laurine (NWRFC) and Eric Anderson.

Problems Encountered/Issues – 1st Quarter FY05

None

Calibration - Complete IDMA Study

Theme: Software Infrastructure and Integration

Management Lead: Mike Smith

Objective: The objective of FY05 work will be to conduct a scientific study to evaluate the impacts of not performing (historical) data quality control procedures on during hydrologic model calibration. FY05 work will complement the initial results from Eric Anderson presented at the 2004 DOH/RDM workshop. The FY05 results will be posted on the HL Calibration web site and will also be submitted to a journal for publication.

Milestones

Task	Due Date	Status
1. Complete Eric Anderson's initial evaluation and put on HL web site	Jan. 27, 2005	Complete
2. Develop literature review to establish how NWS procedures fit into the published literature of accepted practices.	12/31/2004	Complete
3. Develop outline of journal paper.	12/31/2004	Complete
7. Obtain data for additional analyses	5/31/2005	On schedule
8. Calibrate basin with uncorrected/corrected data	8/31/2005	On schedule
9. Analyze calibration results	10/31/2005	On schedule
10. Submit paper to peer-reviewed journal for potential publication.	1/30/ 2006	On schedule

Accomplishments/Actions – 1st Quarter FY05

1. Determined that the NWS double mass analysis procedures fit well into the body of existing quality control procedures for historical data. Climate-change researchers regularly use such procedures and stress their importance.
2. Eric Anderson's initial work shows that biases can result from not corrected data for man-made inconsistencies.

Problems Encountered/Issues – 1st Quarter FY05

1. Discovered that it is difficult to calibrate a basin using mean daily flow given minor changes in the MAP time series (caused by lack of consistency corrections). Proposed solution is to use hourly computations and data.

Calibration - Snow-17 Documentation

Theme: Software Infrastructure and Integration

Management Lead: Mike Smith

Objective: The objective of FY05 work will be to develop updated documentation on the Snow-17 model.

Milestones

Task	Due Date	Status
1. Develop updated Snow-17 documentation	12/31/2005	On schedule
2. Put documentation on HL-web site; other distribution	1/30/2006	On schedule

Accomplishments/Actions – 1st Quarter FY05

Discussed schedule on updated Snow-17 documentation with Eric Anderson.

Problems Encountered/Issues – 1st Quarter FY05

None

Calibration - Re-Implement ICP

Theme: Software Infrastructure and Integration

Management Lead: Jon Roe

Objective: Re-Implement the Interactive Calibration Program (ICP) from the new set of functional requirements generated from an FY04 contract task.

Milestones

Task	Due Date	Status
Write HOSIP Stage 1 documents.	Q2	Not Started
Pass HOSIP Gate 1.	Q2	Not Started
Write Statement Of Objectives (SOO) for contractor tasking.	Q3	Not Started
Review Statement Of Work (SOW) from contractor.	Q4	Not Started
Contractor writes HOSIP Stage 2 and 3 documents.	Q4	Not Started
Pass HOSIP Gates 2 & 3.	Q4	Not Started
Contractor conducts Operational Development and writes HOSIP Stage 4 documents.	Q1, FY06	Not Started
Conduct official acceptance test of new ICP.	Q1, FY06	Not Started
Pass HOSIP Gate 4.	Q2, FY06	Not Started

Accomplishments/Actions – 1st Quarter FY05

We completed project identification, budgeting, and planning.

Problems, Issues, and Notes or Comments – 1st Quarter FY05

We will be having an off-site contractor work on this project. The extent of the implementation to be completed with this work will depend upon the contractor's response to our Statement of Objectives. It is not clear at this point whether the allowed budget will cover complete re-implementation of the ICP by the contractor. This potential shortfall may be exacerbated by having to retrofit early HOSIP documents during this funded item.

Notes:

This project has essentially completed the technical work necessary to pass HOSIP Gates 1, 2, and 3 but the work was performed in FY04 (pre-HOSIP) by an outside contractor culminating in a complete functional requirements document. Now, the current task will have to fill in the required HOSIP deliverables and

formally pass the Gates to get completed.

HOSIP Stage 1 (**INPUT**) documents: Need Identification Document (NID), Statement Of Need (SON).

HOSIP Stage 2 (**VALIDATION**) documents: Concept Of Operations (CONOPS) including high level functional requirements, initial Business Case Analysis (BCA), Stage 3 plan.

HOSIP Stage 3 (**RESEARCH & ANALYSIS**) documents: updated CONOPS with lower level functional requirements, scientific algorithm documentation (if applicable), updated BCA, Stage 4 plan.

HOSIP Stage 4 (**OPERATIONAL DEVELOPMENT**) documents: updated CONOPS with technical requirements, Design Specification, Test Plan, Test Procedures, Test Results, software code, release notes, installation instructions, training materials, user manual materials, and system manual materials.